



Newsletter

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For IES visitors this summer:

In the Gifford Garden, a taste of the tropics... at the gazebo and elsewhere in the garden, over 25 tropical plants including elephant ears, angels' trumpets, banana, sweet potato vine, *Mandevilla*, and the velvety purple flowers of *Tibouchina* will be on display until the first cold fronts of fall.

In the Fern Glen... ferns, sedges and sphagnum thrive in spite of the past spring's drought; lance-leaved coreopsis flowers glow like miniature suns in the dim light of the shrub swamp; the dusty rose flowers of Joe-pye-weed attract orange and black fritillary butterflies; and the small, pale green flowers of *Smilax herbacea*, the carrion flower, use their "fragrance" to attract flies that pollinate them. Check the pond for green frogs and painted turtles, then relax in the Adirondack chairs on the deck overlooking the creek.

At the Greenhouse... the century plant, *Agave americana*, which has been growing here since 1981, started sending up the stalk for its once-in-a-lifetime flower late in April. Growing steadily since, its progress is tracked on our website, at <http://www.ecostudies.org/welcome/ThisWeek.html>. See the 3.5 meter (12 foot)-wide plant inside the building, then walk around to the outside to marvel at its flower stalk reaching for the sun.

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Director: Gene E. Likens
Administrator: Joseph S. Warner
Head of Education: Alan R. Berkowitz
Newsletter Editor: Jill Cadwallader

Address newsletter correspondence to:
Public Information Office
Institute of Ecosystem Studies
Education Program, Box R
Millbrook NY 12545-0178
e-mail: CadwalladerJ@ecostudies.org

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Ecosystem Models: Ecology's Poems? Reflections of a Cary Conference Participant

by Alan R. Berkowitz

Cary Conferences have been held at the Institute every other spring since 1985, each focusing on a different theme. Their purpose, unlike that of many scientific meetings, is to consider the process of science, rather than the detailed content, to help integrate and advance the discipline of ecology. Convened by Drs. Charles D. Canham and Jonathan J. Cole, from IES, and Dr. William K. Lauenroth from Colorado State University, the May 2001 conference was about "Understanding Ecosystems: The Role of Quantitative Models in Observation, Synthesis and Prediction". Cary Conferences are attended by scientists from around the world. Dr. Berkowitz, author of the following essay, is the Head of Education at IES.

Sitting in on the ninth Cary Conference last month as a non-modeler among an incredible group of ecological modelers, I found myself wondering if this is what it would be like to be at a conference of poets. Modelers and poets share much in common. Both seek to capture some essence of the real world – the human experience or nature for poets, or the physical/biological environment for ecological modelers – and represent it with economy and elegance. For both, the proof is largely in the readers' or users' eye ... does it strike some important, shared truth and does it do so without any extra words or unnecessary details?

The modelers were a "cup-half-empty" bunch for most of the three days of the Conference, something rather typical of all scientists and explorers, ever bent on identifying, naming and then boldly going into the newest frontier. Are poets this way, too? While participants at the Conference quickly embraced the basic assertions presented by the organizers – that models are used for many purposes (to guide investigations, to predict and to synthesize), and at all stages of the scientific enterprise – we spent most of our time somewhat pessimistically dwelling on what lies beyond our grasp. This boiled down to four kinds of problems: 1) not enough modeling experts and modeling expertise among ecologists in general; 2) not enough or the right kinds of data; 3) uncertainties in how

to decide just what to include and what to leave out of our models; and 4) the difficulties of doing interdisciplinary work with teams of diverse scientists.

Yet underlying the apparent pessimism that identifying and even dwelling on these problems might belie is an impressive confidence and joy of discovery that I suspect is an attribute modelers share with poets. It is the quest that remains in their eye, and even as they ruminate, their discourse reveals impressive accomplishments in the very problems they agonize over.

To whit. Yes, every ecologist should have modeling among his or her tool bag of skills and a modeling expert at their beck and call. Yet we already have tremendous capacity – human, technical and intellectual – for modeling efforts that wasn't even dreamed of 20 years ago. For example, some of the modelers at the Conference have created simulations keeping track of thousands of individual plants or other organisms, calculating daily birth, growth and mortality rates using realistic parameters collected from field studies and projecting believable patterns of ecological change for entire communities over many centuries. Likewise, Bill Lauenroth, one of the organizers, found in his survey of publications in the journals *Ecology* and *Ecological Applications* that 17% of the papers used modeling ... a cup-three-quarters-empty "problem", in his eyes, that could just as easily be seen as impressive evidence of modeling's pervasiveness in the field.

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L. to r., Drs. Charles Canham (IES) and William Lauenroth (Colorado State Univ.), two of the Cary Conference Convenors, and Dr. Ingrid Burke (Colorado State Univ.), a member of the Conference Steering Committee.

To Write or to Byte: The Importance of Information Services at IES

“The Internet has changed how we do information searches, but it will never change the need for library service. Researchers need specialists to process the huge amount of information that rains on us every day, and to provide access to not-so-freely available resources, which are often the most important.” So explains Chloe Keefer, manager of information services at IES since June 2000, who recognizes that libraries and librarians are, and always will be, critical to the scientific process.

Assisting Institute scientists is what Keefer (right) does, by processing the continuous influx of information that arrives electronically and on paper. Each morning, after “turning on” the Library — not only her own computer but also those at three new work-stations where patrons search electronic databases and catalogs — she checks the day’s mail, skimming scientific journals and articles so she can alert IES scientists to new information relevant to their research. In the library business, she explains, this quick review for key words and phrases is called “environmental scanning”.

The IES Library has a strong budget for journals and books, and Keefer is in charge of purchases. She evaluates possible additions to the collection by reading book reviews in scientific publications, and also by canvassing the staff for their recommendations. While annual subscriptions to the Library’s 175 periodicals are by far the largest part of her budget, the book collection also is heavily used so she keeps pace with the scientists’ needs in that area as well.

In addition, of course, there are the routine tasks involved in running a library: processing new books and journals; guiding the two part-time staff, Cathy Gorham and Carol Hegener; and dealing with budgetary matters. Throughout the day, Keefer also assists IES staff with citations and bibliographical material, deals with inter-library-loan requests, and responds to questions from patrons and other institutions. And, as part of the settling-in process, she spent a good part of the past year reorganizing the Library and weeding out duplicate materials.

Why did Keefer choose to work at IES? “Two reasons,” she replies. “First, I was very impressed by the work done by Beth Hayes [computer network manager] in developing and overseeing an excellent network at the Institute. Second, I could tell that the Library was a valuable part of the IES program; in my interview, Joe Warner [administrator] couldn’t have put it more clearly: ‘The Library is the heart of the Institute.’” And

she doesn’t regret her decision. “I like helping people, responding quickly to their questions, and predicting their needs,” she explains, and she appreciates being part of what she considers the backbone of science. “Scientists need the tools that libraries provide to get the background information they use for their research, and to see what scientists around the world are doing — that’s how science communication works, and how scientific ideas evolve.”

organization dedicated to improving understanding and peace on a global scale by promoting literacy, learning, and access to information. For three weeks, she was a volunteer in a school library in Ganyesa, a remote village in northwestern South Africa, near the border of Botswana.

Her work there consisted primarily of repairing books and raising money to buy new ones, and of sharing ideas on the use of



LORNA KELLY

Keefer feels that scientific publishing is at a point where there is going to be a huge change, and the challenge will be to meet everyone’s needs — some users will want paper, and others will want immediate information on their computer screens. “In a few short years,” she says, “there will be more and more electronic journals — publishing in science is poised to change completely, and people will adjust to that in different ways.” In an effort to make the transition at IES, for the time being the Library subscribes to approximately 45 online scientific journals, all of which duplicate print journals to which it currently subscribes.

* * * * *

Chloe M. Keefer has a master’s degree in Library and Information Studies from the University of Wisconsin at Madison. With a bachelor’s degree in Conservation Biology and Environmental Studies from the same university, she also has an understanding of scientific inquiry, a background in scientific terminology, and some experience with scientific research and publishing, all of which help her deal efficiently and effectively with the needs of IES researchers.

Just before she began her job at the Institute, she joined 16 other librarians from across the U.S. in the World Library Partnership - Inform the World Program, a non-profit

the library in the classroom. In an article for the University of Wisconsin’s Library School Alumni Newsletter, she wrote:

At the very least, our visit generated interest in and enthusiasm for the library. A group of seventh graders helped us sort the small book collection into three separate languages that students in Ganyesa learn: their mother tongue Setswana, Afrikaans, and English. The seventh graders touched each of the books, translating the titles for their new American friends and practicing their English. It was a cultural exchange, and they felt some ownership of the library. ●

Library Use at the Institute of Ecosystem Studies

The IES Library is used regularly by scientists and students from other institutions in the Hudson Valley area. The Library invites use by the public on weekdays from 9 a.m. - 4 p.m., by appointment. The collection includes not only materials in a number of scientific disciplines but also a general collection of books relevant to IES Continuing Education Program classes in gardening and landscape design. If you would like to arrange to use the Library, call Chloe Keefer at 845-677-7600 ext. 164 or send her an e-mail at Keeferc@ecostudies.org.

Hundreds Enjoy a Public Weekend at IES

Although the weather on the weekend of 31 March and 1 April wasn't an example of the best that early spring has to offer, well over 400 people visited the Institute to enjoy the many attractions of the "Public Weekend at IES".

A Regional Artisan's Market at the Gifford House Visitor and Education Center was the "anchor" for the weekend, drawing browsers and shoppers throughout the two days. Coordinated by Su Marcy, who has operated The Ecology Shop for well over a decade, this event featured craftspeople from across the Hudson Valley.

Saturday's focus was on children, with a morning-full of fun at the Greenhouse and a raptor demonstration behind the Gifford House parking lot in the afternoon. On Sunday, after a guided walk in the morning, those with gardening interests sat in on a Q-and-A with Brad Roeller, manager of the Institute's display gardens and – thanks to the efforts of the Merritt Bookstore in Millbrook – a chat with garden authors Mike Ruggiero and Duncan Brine at a book-signing. The weekend drew to a close with a guided tour of the new Likens Laboratory, led by the Institute's assistant director, Michael Pace, and a reception to open *Remnants: Ancient Forests and City Trees* and to meet the artist, Prilla Smith Brackett. (Note: One of Brackett's paintings now hangs permanently in the lobby of the Plant Science Building.)

We hope to make a Public Weekend at IES an annual event.



Visitors hardly noticed the blustery gray weather as they learned about the ecology of raptors from Jim Eyring, assistant director of the Environmental Center at Pace University. Eyring, a teacher and naturalist, brought some of his magnificent birds with him, including a Lanner falcon named Delta, and Bonnie, an American kestrel. Here, Eyring's gloved hand is a perch for Bonnie between flights.

RONALD KELLY



For two days, the classrooms at the Gifford House Visitor and Education Center were packed with Regional Artisan's Market vendors and shoppers. Among the craftspeople selling their wares were Anne DiNardi (left), of Kingston, N.Y., whose specialty is pottery with botanical themes, and Sally Lyon of Rhinebeck, N.Y., a maker of sterling silver jewelry.



Activities at the Greenhouse included "Plant Power", based on the Institute's popular ecology field program for school groups; an origami class; and, shown at left, "Planting for Kids". Judy Sullivan, native plant gardener and Continuing Education Program instructor, was well-prepared with soil, pots, sunflower seeds and watering can, and sent each child (and some of their parents) home with what by now, she hopes, is a plant about to add color and beauty to the family's garden.

PHOTOGRAPH BY LONNA KELLY

Ecology's Poems, from page 1

Or take the insufficient data problem. Yes, there is a tremendous challenge for modelers to try to use data that were not collected for their purposes, and to justify collection of data just for models when the cost is high and the payoff uncertain. Yet through these same discussions, we learned that the first-ever estimates of daily photosynthesis for the entire globe were being made available via the internet to anyone who wanted them, based on satellite-collected data for each of 150 million 30 meter x 30 meter cells across the Earth's surface and models written by people in our very conference room. Advances in data collection and dissemination have us poised for unprecedented access to information for modeling.

The issue of what to include and exclude in one's model occupied much of our time, as well it should. For this is the art of modeling, or of any other approach to scientific understanding for that matter. How simple can it be while still capturing the key phenomena you seek to describe? Here is a place where we might, in fact, learn from the poets!

And finally, there is the interdisciplinary group problem. How can we learn to talk and work with people with different expertise? This has been a common theme in virtually every Cary Conference, where indeed very diverse groups routinely talk with each other about these self-same challenges. In truth, the very fact that models

demand a common framework and currency puts modeling at the heart of the solution to this challenge.

One of the clearest and most positive conclusions at the Conference was the need to champion the messages, "We are modelers" and "We need to teach more modeling at every stage of ecology education." I suspect that a conference of poets might arrive at similar conclusions, for we all benefit from trying our hand at poetry, and from knowing and appreciating the poetry of others. If the ninth Cary Conference succeeds in establishing a stronger and more integral role for modeling in the curriculum, it will be a very impressive accomplishment, indeed, bringing poetry to the ecological masses!

INSTITUTE OF
ECOSYSTEM STUDIES
Education Program
Box R
Millbrook, New York 12545-0178

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CONTINUING EDUCATION
For information, or to request a catalogue, call the Continuing Education office at 845-677-9643 or visit www.ecostudies.org/cep. July - August programs are:

Gardening

July 10: **Superior Plants for Shady Borders**

July 14: **Gardening Is for the Birds (& Butterflies)**

July 28: **Summer Garden Maintenance**

August 6 (5 sessions): **Fundamentals of Gardening**

Landscape Design

August 4: **Ecological Alternatives to Lawns**

August 10: **History of Landscape Design: Landscapes of Hyde Park Estates**

Biology

August 8 (3): **Identifying Plant Families**
Natural Science Illustration

July 17: **Watercolors in the IES Garden**
Excursions

July 11: **Behind the Scenes at Mohonk Mountain House**

July 14: **Sunset at Constitution Marsh**

July 25: **Early 20th Century Connecticut Gardens**

SATURDAY ECOLOGY PROGRAM

Free public programs are held the first Saturday of each month. These guided programs begin at 10 a.m. at the Gifford House and last approximately two hours. Pre-registration isn't necessary, but if you have questions call 845-677-7600 ext. 321 for information on the following:

July 7: **Nature Photography**

August 4: **In and Around Cary Pond**

Please dress according to the weather, with long pants tucked into socks and sturdy, waterproof shoes.

IES SEMINARS

Free scientific seminars are held on Fridays from September until early May. The fall schedule will be available in August.

For information on current IES public events and attractions, visit: www.ecostudies.org/welcome/ThisWeek.html
For garden tips, follow the link to the Perennial Garden Archives.

Calendar

ART EXHIBIT

ecollage³

Artwork by IES staff will be on display at the Plant Science Building from July 23 through early November. The Plant Science Building lobby is open to the public Monday through Friday from 9 a.m. - 4 p.m. (closed public holidays). Admission is by free access permit from the Gifford House (see HOURS).

GREENHOUSE

The greenhouse is a year-round tropical plant paradise and a site for controlled environmental research. Open daily until 3:30 p.m. with a free permit (see HOURS).

THE ECOLOGY SHOP

New in the Shop ... local photography: note cards by Marcia Grant, as seen at the IES Regional Artisan's Market, and note cards and matted and framed photos by Judith Smith ... **for children** ... reptile/flower/butterfly sticker books ...

"Scrambled Squares" puzzles ... **in the Garden**

Room ... scented geraniums ... ivies ... Burt's Bees products

Senior Citizens Days: 10% off on Wednesdays

HOURS

Summer Hours: April 1 - September 30

Free permits are required for visitors and are available at the Gifford House Visitor and Education Center until 5 p.m.

Public attractions: Mon. - Sat., 9 a.m. - 6 p.m. and Sun. 1-6 p.m.; closed public holidays. The Greenhouse closes at 3:30 p.m. daily.

The Ecology Shop: Mon.- Fri., 11 a.m. - 5 p.m., Sat. 9 a.m.-5 p.m., and Sun. 1-5 p.m.
(The shop is closed weekdays from 1-1:30 p.m.)

FALL PLANT SALE

Save the dates!

Saturday, September 8 and Sunday, September 9 under the tent at the Gifford House.

GROUP TOURS

Garden clubs, community groups, student organizations and others can request guided tours of the Gifford Garden, Fern Glen or Greenhouse (winter only). For information on fees, or to make reservations, call Jill Cadwallader at 845-677-7600 ext. 321.

MEMBERSHIP

Join the Institute of Ecosystem Studies. Benefits include subscription to the newsletter, member's rate for courses and excursions, a 10% discount on IES Ecology Shop purchases, and participation in a reciprocal admissions program. Individual membership: \$40; family membership: \$50. Call the IES Development Office at 845-677-5343.

The Institute's Aldo Leopold Society

In addition to receiving the benefits listed above, members of The Aldo Leopold Society are invited guests at spring and fall IES science updates. Call the IES Development Office at 845-677-5343.

TO CONTACT IES ...

... for research, graduate opportunities, library and administration:

Institute of Ecosystem Studies
Box AB, Millbrook NY 12545-0129
Tel: 845-677-5343 • Fax: 845-677-5976
Street address: Plant Science Building,
65 Sharon Tpke. (Rte. 44A), Millbrook, N.Y.

... for education, general information and The Ecology Shop:

Institute of Ecosystem Studies
Education Program,
Box R, Millbrook NY 12545-0178
Tel: 845-677-5359 • Fax: 845-677-6455
The Ecology Shop: 845-677-7600 ext. 309
Street address: Gifford House Visitor and
Education Center, 181 Sharon Tpke. (Rte. 44A),
Millbrook, N.Y.

... IES website: www.ecostudies.org